

Appl. No. 10/604,599
Amtd. dated July 6, 2006
Reply to Office action of May 9, 2006

AMENDMENTS TO THE CLAIMS

Listing of Claims:

Claims 1 – 20 (cancelled)

5

21. (Previously Presented)

A color conversion apparatus for converting an input color being in a first color space to an output color being in a second color space, wherein both the input color and the output color include a plurality of color elements, the apparatus comprising:
10 a first lookup table being coupled to a first color element of the input color for outputting a corresponding first converted color element;
a second lookup table being coupled to a second color element of the input color for outputting a corresponding second converted color element; and
an adder circuit being coupled to the first lookup table and the second lookup table
15 for summing the first converted color element, the second converted color element and a target color element to thereby generate a color element of the output color;
wherein both of the input color and the output color are in a RGB format including R, G,
and B components respectively representing red, green, and blue colors, and both of the
20 target color element and the color element of the output color relate to the same component, that is the R, G, or B component.

22. (Previously Presented) The apparatus of claim 21, further comprising:

a gamma correction circuit being coupled to a third color element of the input color
25 for generating the target color element;
wherein the adder circuit is further coupled to the gamma correction circuit for summing the first converted color element, the second converted color element, and the target color element to thereby generate the color element of the output

Appl. No. 10/604,599
Amdt. dated July 6, 2006
Reply to Office action of May 9, 2006

color being in the second color space.

23. (Previously Presented) The apparatus of claim 21, wherein the adder circuit is for summing the first converted color element, the second converted color element, and the target color element to thereby generate a temporary color element.
5
24. (Previously Presented) The apparatus of claim 23, further comprising a gamma correction circuit being coupled to the adder circuit for performing a gamma correction operation on the temporary color element outputted by the adder to thereby generate the color element of the output color being in the second color space.
10
25. (Previously Presented) The apparatus of claim 21, wherein the first lookup table maps a plurality of values for the first color element of the input color to a single corresponding value of the first converted color element, and the second lookup table maps a plurality of values for the second color element of the input color to a single corresponding value of the second converted color element.
15
26. (Previously Presented) The apparatus of claim 25, wherein within the first lookup table, eight values of the first color element of the input color map to a single corresponding value of the first converted color element; and within the second lookup table, eight values of the second color element of the input color map to a signal corresponding value of the second converted color element.
20
- 25 27. (Previously Presented) The apparatus of claim 21, wherein the first lookup table is indexed by using a number of bits from values of the first color element of the input color; and the second lookup table is indexed by using the number of bits from values of the second color element of the input color.

Appl. No. 10/604,599
Amdt. dated July 6, 2006
Reply to Office action of May 9, 2006

28. (Previously Presented) The apparatus of claim 27, wherein the number of bits comprise a number of most significant bits.
- 5 29. (Previously Presented) The apparatus of claim 21, wherein both the first lookup table and the second lookup table comprise a plurality of sub-tables for storing a relationship between the first color space and the second color space.
- 10 30. (Previously Presented) The apparatus of claim 21, wherein the apparatus is utilized in a liquid crystal display (LCD).
- 15 31. (Previously Presented)
A method for converting an input color being in a first color space to an output color being in a second color space, wherein both the input color and the output color include a plurality of color elements, the method comprising:
looking up a first color element of the input color in a first lookup table to determine a corresponding first converted color element;
looking up a second color element of the input color in a second lookup table to determine a corresponding second converted color element; and
20 summing the first converted color element, the second converted color element and a target color element to thereby generate a color element of the output color;
wherein both of the input color and the output color are in a RGB format including R, G, and B components respectively representing red, green, and blue colors, and both the target color element and the color element of the output color relate to the same component, that is R, G, or B component.
- 25 32. (Previously Presented) The method of claim 31, further comprising:
performing a gamma correction operation on a third color element of the input color

Appl. No. 10/604,599
Amdt. dated July 6, 2006
Reply to Office action of May 9, 2006

to generate the target color element; and
summing the first converted color element, the second converted color element, and
the target color element to thereby generate the color element of the output color
being in the second color space.

5

33. (Previously Presented) The method of claim 31, further comprising summing the
first converted color element, the second converted color element, and the target
element to thereby generate a temporary color element.

10 34. (Previously Presented) The method of claim 33, further comprising performing a
gamma correction operation on the temporary color element of the output color to
thereby generate the color element of the output color being in the second color
space.

15 35. (Previously Presented) The method of claim 31, wherein the first lookup table
maps a plurality of values for the first color element of the input color to a single
corresponding value of the first converted color element, and the second lookup
table maps a plurality of values for the second color element of the input color to a
single corresponding value of the second converted color element.

20

36. (Previously Presented) The method of claim 35, wherein within the first lookup
table, eight values of the first color element of the input color map to a single
corresponding value of the first converted color element; and within the second
lookup table, eight values of the second color element of the input color map to a
single corresponding value of the second converted color element.

25

37. (Previously Presented) The method of claim 31, further comprising:

Appl. No. 10/604,599
Amdt. dated July 6, 2006
Reply to Office action of May 9, 2006

- indexing the first lookup table by a number of bits from values of the first color element of the input color; and
- 5 indexing the second lookup table by the number of bits from values of the second color element of the input color.
38. (Previously Presented) The method of claim 37, wherein the number of bits comprise a number of most significant bits.
- 10 39. (Previously Presented) The method of claim 31, further comprising storing a relationship between the first color space and the second color space within a plurality of sub-tables in both the first lookup table and the second lookup table.
- 15 40. (Previously Presented) The method of claim 31, wherein the method is utilized in a liquid crystal display (LCD).